



Australian Government

MARE5001A Communicate effectively when performing engineering duties

Release 1

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Modification History

Release 1

This is the first release of this unit.

This unit replaces and is equivalent to TDMME707B Use English in written and oral form to perform engineering duties.

Unit Descriptor

This unit involves the skills and knowledge required to communicate effectively when performing engineering duties on board a commercial vessel and includes communicating with others; reading and interpreting engineering publications, specifications, instructions and other documents; reading and interpreting equipment performance indications; using available tools to communicate between the bridge, engine control room and main engine room; and using a computer to enter and retrieve engineering information.

Application of the Unit

This unit applies to the work of Marine Engineering Watchkeepers on commercial vessels greater than 750 kW and forms part of the requirements for the Certificate of Competency Marine Engineer Watchkeeper issued by the Australian Maritime Safety Authority (AMSA).

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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|---|---|
| 1 Apply information to engineering watchkeeping duties | <ul style="list-style-type: none">1.1 <i>Relevant engineering publications and other documentation</i> are identified and accessed1.2 Required information is extracted from relevant engineering publications and other documentation and is appropriately applied to work activities according to established marine engineering practice1.3 Information in relevant engineering publications and other documentation used in day-to-day work is applied to work activities1.4 Engineering specifications and drawings are correctly read and interpreted, and information is applied according to established marine engineering practice |
| 2 Apply engineering information | <ul style="list-style-type: none">2.1 Readings on <i>performance indicators</i> are correctly made and interpreted2.2 Engineering information, procedures, instructions and directions are obtained, interpreted and applied2.3 Standard drawing symbols, appropriate instrumentation and process control terms are correctly used in relation to actions and functions of marine equipment and plant2.4 Engineering drawings and control loops are correctly sketched as required2.5 Engineering reports, running sheets and other engineering documentation relevant to the performance of engineering duties are correctly and accurately completed |
| 3 Communicate between bridge, engine control room and main engine room | <ul style="list-style-type: none">3.1 <i>Available tools</i> are correctly used to communicate between bridge, engine control room and main engine room3.2 Appropriate records of engineering communications are completed according to organisational procedures and regulatory requirements |

**4 Communicate
with officers,
crew and others**

- 4.1 Clear and precise communication is used and established communication practices are followed
- 4.2 Communication misunderstandings are avoided using appropriate confirmation techniques and established communication practices
- 4.3 Messages concerning vessel safety and operations are received, read, clarified as required, correctly interpreted and applied to engineering activities
- 4.4 Appropriate techniques are used when communicating with multilingual crew to ensure communication is effective and messages are clearly understood
- 4.5 Non-verbal communication is appropriately used when working and communicating with others
- 4.6 Feedback, instruction and training on work performance is effectively provided to engine room crew according to vessel procedures and established engineering practice

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required Skills:

- Assess own work outcomes and maintain knowledge of current codes, standards, regulations and industry practices
- Communicate effectively verbally and in writing
- Identify and interpret numerical and graphical information in marine engineering publications
- Identify, collate and process information required to prepare verbal and written reports
- Impart knowledge and ideas as required through oral, written and visual means
- Interpret documentation related to marine engineering operations
- Read and interpret written information needed to perform basic marine engineering tasks
- Resolve misunderstandings in written and verbal communication
- Use computer and relevant equipment to enter, access and retrieve engineering information
- Use established marine engineering vocabulary as required

Required Knowledge:

- Established engineering practice for the operation, checking, maintenance and repair of marine plant, machinery, equipment and systems
- Established written, verbal and non-verbal marine engineering communication practices
- Marine engineering communication techniques, including barriers to effective communication and how to overcome them
- National and international regulations, IMO Conventions and Codes, including AMSA Marine Orders applicable to the operation, maintenance and repair of plant, machinery and equipment on vessels of unlimited propulsion power
- Principles of effective communication
- Protocols and procedures for communicating with others on board vessels
- Relevant industrial award requirements as they relate to shipboard engineering personnel responsibilities, obligations and entitlements
- Relevant work health and safety (WHS)/occupational health and safety (OHS) legislation, codes of practice, policies and procedures
- Standard nautical vocabulary as described in IMO Standard Marine Communication Phrases
- Techniques for communicating effectively with a multilingual crew
- Tools typically available for communication between bridge, engine control room and main engine room
- Typical communication problems and appropriate action and solutions

- Work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, the required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include:

- attention to detail when communicating with others
- attention to appropriate level of detail in recordkeeping.

Context of and specific resources for assessment

Performance is demonstrated consistently over time and in a suitable range of contexts.

Resources for assessment include access to:

- industry-approved marine operations site where communicating effectively when performing engineering duties can be demonstrated
- technical reference library with current publications on basic marine operations
- tools, equipment and personal protective equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities
- range of relevant exercises, case studies and/or other simulated practical and knowledge assessments
- appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

Practical assessment must occur in an:

- appropriately simulated workplace environment and/or
- appropriate range of situations in the workplace.

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are

appropriate to this unit:

- direct observation of the candidate communicating effectively when performing engineering duties
- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

In all cases where practical assessment is used it should be combined with targeted questioning to assess Required Knowledge.

Assessment processes and techniques must be appropriate to the language and literacy requirements of the work being performed and the capacity of the candidate.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.

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|--|---|
| Relevant engineering publications and other documentation may include: | <ul style="list-style-type: none">• Anti pollution and environmental protection regulations and procedures, including relevant sections of the MARPOL Convention• Instructions of relevant maritime authorities and classification societies concerning shipboard machinery operations, maintenance and repair• ISM Code safety management system plans, procedures, checklists and instructions• Machinery and vessel manufacturer specifications, instructions and recommended procedures• Marine engineering publications and manuals• Relevant sections of national and international regulations, IMO Conventions and Codes, including AMSA Marine Orders and class society rules dealing with shipboard machinery maintenance and repair• Operational and maintenance logs, running sheets and records, including computer databases of running information and maintenance records• Vessel and organisational planned operational and maintenance procedures and instructions• Vessel safety and emergency contingency plans and procedures, including relevant sections of the SOLAS Convention• Vessel survey as it relates to shipboard plant, equipment and machinery |
| Performance indicators may include: | <ul style="list-style-type: none">• Computer screens• Gauges• Instrumentation |
| Available tools may include: | <ul style="list-style-type: none">• Alarms• Hand held radios• Internal communication systems |

Unit Sector(s)

Not applicable.

Competency Field

Communication